

# Metalworking Machinery: 2004

Issued July 2005

## Summary

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These data are also available on Internet through the U.S. Department of Commerce and STAT-USA by subscription. The Internet address is: [www.stat-usa.gov/](http://www.stat-usa.gov/). Follow the prompts to register. Also, you may call 202-482-1986 or 1-800-STAT-USA, for further information.

For general CIR information, explanation of general terms and historical note, see the appendix.

## Current Industrial Reports

Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Larry Blumberg, 301-763-4744.

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U S C E N S U S B U R E A U

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U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU

Table 1. Value of Shipments, Including Exports of Metalworking Machinery by Class of Product: 2000 to 2004  
[Thousands of dollars]

Product code	Product description	2004	2003	2002	2001	2000
	Metalworking machinery.....	2,492,125	1,965,684	2,002,082	2,987,581	3,632,410
	Metal cutting type 1/ 2/.....	1,838,691	1,399,170	1,418,660	2,163,666	2,552,370
333512A1	Boring machines .....	90,956	76,577	128,329	124,763	87,200
333512A1	Drilling machines 3/.....	52,519	52,704	17,137	22,576	23,694
33351211	Gear cutting machines 3/ 4/.....	342,244	287,098	111,048	137,232	180,616
33351221	Grinding and polishing machines (except gear-tooth grinding, lapping, polishing, and buffing machines).....	195,753	168,641	210,691	367,715	454,313
33351231	Lathes 5/ 6/.....	232,063	119,490	132,365	262,020	287,021
33351241	Milling machines 7/.....	35,086	39,332	56,125	137,778	150,503
33351271	Machining centers (multifunction numerically controlled machines).....	475,206	318,340	273,639	435,493	629,717
33351281	Station type machines 4/.....	(D)	(D)	169,896	347,948	401,772
33351291	Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, etc.).....	364,962	250,090	238,295	276,354	333,204
3335126111	Remanufactured metal cutting machine tools.....	46,084	42,386	50,404	49,174	(NA)
	Metal forming type 8/.....	653,434	566,514	583,422	823,915	1,080,040
33351311 pt.	Punching and shearing machines.....	148,328	103,056	105,925	155,316	203,813
33351311 pt.	Bending and forming machines.....	175,488	132,527	141,273	202,586	262,372
33351331	Presses (except forging).....	123,399	120,879	140,063	180,347	303,146
33351351 pt.	Forging machines 9/.....	(D)	(D)	(D)	(D)	(D)
33351351 pt.	Other metal forming type machines 9/.....	150,137	169,130	187,360	275,785	310,709
3335137121	Remanufactured metal forming machine tools.....	7,529	8,964	8,801	9,881	(NA)

D Withheld to avoid disclosing data for individual companies. NA Not available. pt. Part.

1/Data for "All lathes (turning machines) valued under \$3,025 each" and "All milling machines, valued under \$3,025 each" are included in total "Metal cutting type."

2/For 2002 and 2003, data for product codes 3335123126, "Vertical NC turning machines," and 3335123134, "All nonnumerically controlled lathes (turning machines) valued at \$3,025 each or more" are included in total "Metal cutting type."

3/For 2001 and 2002, data for part of "Drilling machines" have been combined with "Gear cutting machines" to avoid disclosing data for individual companies.

4/For 2003 and 2004, data for "Station type machines" have been combined with "Gear cutting machines" to avoid disclosing data for individual companies.

5/For 2002 and 2003, data for product code 33351231, "Lathes," excludes the values for product codes 3335123126, "Vertical NC turning machines" and 3335123134, "All nonnumerically controlled lathes (turning machines) valued at \$3,025 or more."

6/For 2004, data for product code 33351231, "Lathes," excludes the values for product code 3335123131, "All lathes (turning machines) valued under \$3,025 each."

7/Product code 33351241, "Milling machines," excludes the value for product code 3335124101, "All milling machines valued under \$3,025 each."

8/For 2004, data for product codes 3335131101, "All punching and shearing machines valued under \$3,025 each," 3335133101, "All presses valued under \$3,025," and 3335135101, "All other metal forming type machine tools valued under \$3,025 each" are included in total "Metal forming type."

9/Data for "Forging machines" are combined with "Other metal forming type machines" to avoid disclosing data for individual companies.

Table 2. Total Shipments and Unfilled Orders  
[Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2004				2003							
			Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)						
			Quantity	Value		Quantity	Value							
	Metalworking machinery.....	(X)	123,353	2,492,125	935,956	113,174	1,965,684	754,819						
	Total metal cutting type machine tools.....	(X)	70,221	1,838,691	623,876	62,878	1,399,170	527,337						
	Total metal forming type machine tools.....	(X)	53,132	653,434	312,080	50,296	566,514	227,482						
	Metal cutting type machine tools valued at \$3,025 each or more 1/.....	(X)	25,905	1,762,817	588,998	18,869	1,332,688	517,303						
	Metal cutting type machine tools valued under \$3,025 2/ 3/ 4/.....	(X)	43,820	29,790	464	43,586	24,096	397						
333512A1	Boring and drilling machines 2/ 7/.....	35	3,118	145,969	49,240	2,812	131,480	64,532						
333512A101	All boring machines valued under \$3,025 each 2/.....	-	(X)	(X)	(X)	(D)	(D)	(X)						
333512A103	Boring machines valued at \$3,025 each or more: Horizontal boring, drilling, and milling machines, including floor, table, rail mounted, and all other nonprecision boring machines (except boring lathes) 5/.....	7	(D)	(D)	(D)	(D)	(D)	(D)						
333512A105	Precision and jig boring machines, including horizontal and vertical machines 5/.....	4	c/	1,519	b/	90,956	36,322	b/	1,231	b/	76,577	c/	49,179	
333512A111	All drilling machines valued under \$3,025 each 2/.....	10	b/	1,177	a/	2,494	88	b/	1,200	a/	2,199	(D)		
333512A113	Drilling machines valued at \$3,025 each or more: Vertical upright drilling machines, including plain upright and heavy duty 6/.....	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)				
333512A117	Deep hole drilling machines 6/.....	6	b/	203	c/	36,914	b/	3,289	c/	163	c/	36,848	c/	4,569
333512A119	Multiple spindle drilling machines: Adjustable joint and fixed center types 7/ 8/.....	5	(D)	(D)	(D)	(D)	(D)	(D)	(D)					
333512A121	All other automatic multiple spindle drilling machines 7/ 8/.....	6	47	b/	7,297	a/	9,541	(D)	(D)	10,784				
333512A123	All other drilling machines, n.e.c. 7/.....	3	172	a/	8,308	(X)	218	a/	15,856	(X)				
3335121100	Gear cutting machines, including gear hobbess, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines 9/.....	5	553	342,244	151,697	374	287,098	a/	212,928					
33351221	Grinding, polishing, buffing, honing, and lapping machines .....	59	29,606	195,753	128,659	32,386	168,641	75,004						
3335122101	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each .....	13	27,090	11,912	(D)	30,154	11,117	85						
3335122108	All grinding, polishing, buffing, honing, and lapping machines valued at \$3,025 each or more: External cylindrical grinding machines: Plain and universal, including angular wheel types 10/.....	3	(D)	(D)	(D)	(D)	(D)	5,563						
3335122116	Roll, chucking, centerless, and other cylindrical grinding machines 10/.....	9	c/	590	44,073	30,653	444	39,362	(D)					
3335122120	Internal cylindrical grinding machines 10/.....	1	(D)	(D)	(D)	(D)	(D)	(D)						
3335122122	Surface grinding machines 11/.....	8	(D)	(D)	5,727	(D)	(D)	(D)						
3335122136	All other disc grinders, including bench, floor, snag, double spindle grinders, and abrasive belt grinders 11/.....	3	575	14,624	(D)	a/	387	a/	10,521	2,384				
3335122142	Tool, cutter, and drill point grinding machines 10/.....	12	218	38,911	(D)	192	30,431	(D)						
3335122151	All other grinding machines, n.e.c., including planer type, and thread grinding machines 10/.....	13	a/	386	36,513	36,490	a/	479	37,488	40,880				
3335122156	Honing and lapping machines (except flat surface lapping machines), internal, including combination bore, hone, and external 12/ 13/.....	5	(D)	(D)	(D)	(D)	(D)	(D)						
3335122161	Flat surface lapping machines (except gear lapping) 12/ 13/.....	4	503	39,765	b/	114	558	30,252	(D)					
3335122166	Polishing and buffing machines, including speed lathes and multistation type 13/.....	9	b/	244	b/	9,955	55,675	172	9,470	c/	26,092			
33351231	Lathes 1/ 3/.....	(X)	4,038	232,063	60,509	1,816	119,490	22,020						
	Numerically controlled: Horizontal.....	5	3,212	187,580	36,328	1,816	119,490	22,020						
3335123101	Multiple spindle NC turning machines 14/.....	1	(D)	(D)	(X)	(D)	(D)	(D)						
3335123107	Single spindle NC turning machines: Chuck sizes less than 10 inches .....	4	2,181	103,431	18,496	1,234	67,034	11,423						
3335123116	Chuck sizes from 10 inches but less than 15 inches 14/.....	4	(D)	(D)	(D)	(D)	(D)	(D)						
3335123121	Chuck sizes 15 inches and over 14/.....	2	1,031	84,149	17,832	582	52,456	10,597						
3335123126	Vertical NC turning machines 1/.....	4	70	31,287	23,200	(D)	(D)	(D)						
3335123131	All lathes (turning machines) valued under \$3,025 each 3/.....	2	(D)	(D)	(X)	(D)	(D)	(D)						
3335123134	All nonnumerically controlled lathes (turning machines) valued at \$3,025 each or more 1/.....	8	c/	756	b/	13,196	b/	981	(D)	(D)	(D)			

Table 2. Total Shipments and Unfilled Orders  
[Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2004			2003		
			Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
33351241	Milling machines 4/.....	12	812	35,086	3,125	531	39,332	7,042
3335124101	All milling machines valued under \$3,025 each 4/.....	2	(D)	(D)	(X)	(D)	(D)	(X)
3335124106	All milling machines valued at \$3,025 or more: General-purpose, knee milling machines, all types 15/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
3335124111	Automatic: Single spindle, multiple spindle and special-purpose machines 15/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
3335124121	All other milling machines, n.e.c., including planer type and thread milling machines 15/.....	5	a/ 812 c/	35,086 a/	3,125 a/	531 c/	39,332 c/	7,042
33351271	Machining centers.....	14	9,308	475,206	114,856	5,841	318,340	72,746
	Drill, mill, and bore, vertical (automatic tool change):							
3335127101	Y-axis travel less than 20 inches 16/.....	4	(D)	(D)	15,741	(D)	(D)	(D)
3335127106	Y-axis travel 20 inches through 26 inches 16/.....	5	6,783	321,311	41,129	4,275	205,126	33,655
3335127111	Y-axis travel over 26 inches 16/.....	6	639	66,111	13,814	390	39,905	5,642
	Drill, mill, and bore, horizontal (automatic tool change):							
3335127112	Under 500mm pallet and smaller 17/ 18/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
3335127113	500mm to 800mm pallet and smaller 17/ 18/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
3335127114	Over 800mm pallet 17/18/.....	2	(D)	(D)	(D)	138	42,537	(D)
3335127146	All other machining centers, including special machining, special adapting of standard machining and machining centers with indexing turret 17/.....	3	1,886	87,784	44,172	1,038 a/	30,772 b/	33,449
33351281	Station type machines 9/.....	8	(D)	(D)	(D)	(D)	(D)	(D)
3335128101	Dial or rotary, trunnion, and center column 9/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
3335128106	Transfer 9/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
3335128111	Other station type, n.e.c. 9/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
33351291	Other metal cutting machine tools 2/.....	52	20,446	364,962	81,000	16,699	250,090	45,429
3335129101	Other metal cutting machine tools, n.e.c., valued under \$3,025 2/.....	13	b/ 13,709	14,060	(D) c/	10,817 c/	9,804	(D)
3335129106	Other metal cutting machine tools, n.e.c., valued at \$3,025 each or more: Broaching machines 19/.....	6	(D)	(D) a/	1,561	(D)	(D)	2,115
	Sawing and cutoff machines:							
	Band saws:							
3335129122	Horizontal 20/.....	8	(D)	(D)	(D)	(D)	(D)	(D)
3335129123	Vertical 20/.....	5	a/ 2,670 a/	32,919	4,531 a/	2,226 b/	28,537 c/	1,767
3335129126	All other sawing and cutoff machines.....	11	470	16,466	5,575	424	15,930	1,467
3335129131	Spark erosion, ultrasonic, and electrolytic machines, all types 19/.....	2	(D)	(D)	(D)	454	32,651	(D)
3335129136	Miscellaneous metal cutting machine tools 19/.....	26	a/ 3,597	301,517	69,333	2,778	163,168	40,080
3335126111	Remanufactured metal cutting machine tools.....	17	496	46,084	34,414	423 a/	42,386 a/	9,637
	Metal forming type machine tools valued at \$3,025 or more.....	(X)	11,645	595,152	304,382	10,658	520,225	220,717
	Metal forming type machine tools valued under \$3,025 21/.....	(X)	41,422	50,753	648	39,515	37,325	608
33351311	Punching, shearing, bending, and forming machines 21/.....	60	9,134	323,816	148,250	7,993	235,583	120,439
3335131101	All punching and shearing machines valued under \$3,025 each 21/.....	8	(D)	(D)	(D)	(D)	(D)	(D)
	All punching and shearing machines valued at \$3,025 each or more: Power operated only:							
3335131106	Punches, including combination punching and shearing machines .....	14	b/ 3,016 a/	60,803 b/	2,279 b/	2,205 a/	29,778	1,071
3335131111	Punching machines fixed position and two axes positioning table 22/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
	Plate shearing machines:							
3335131116	Mechanical 22/23/.....	5	113	4,271	(D)	(D)	(D)	874
3335131121	Hydraulic 23/.....	10	723	14,218	2,439	759	13,924	1,617
3335131126	Other power-operated punching and shearing machines 22/.....	6	1,072	69,036	13,536	940	59,354	10,857
3335131131	All bending and forming machines, power operated valued under \$3,025 each .....	5	1,197	2,200	378	1,435	2,237	216
	All bending and forming machines, power operated valued at \$3,025 each or more:							
3335131136	Press brakes, all types 24/.....	8	a/ 629 a/	62,042	7,390	380	30,370	(D)
3335131142	Roll bending machines, including sheet, plate, angles, bars, shapes, and tubes 25/.....	6	(D)	(D)	(D)	(D)	(D)	(D)

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[Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2004				2003			
			Total shipments		Unfilled orders (value)		Total shipments		Unfilled orders (value)	
			Quantity	Value			Quantity	Value		
3335131151	Rotary bending and forming machines, including rotary head 25/.....	10	a/	559	48,684	a/	16,206	a/	666	47,599
3335131161	Other bending and forming machines, including folders and slide bending machines 24/.....	17		1,825	62,562		106,022		1,608	52,321
33351331	Presses (except forging) 21/.....	31		1,542	123,399		74,505		7,053	120,879
3335133101	All presses valued under \$3,025 each 21/.....	6		(D)	(D)	(D)	a/	5,441	a/	3,130
	All presses valued at \$3,025 each or more:									
	Mechanical presses:									
	Gap or C-frame:									
3335133106	50 tons and under 26/.....	4		(D)	(D)	(D)		(D)	(D)	(D)
3335133113	Over 50 tons 26/.....	3	b/	138	2,567	185	c/	247	b/	3,646
	Vertical straight sided and arch frame single action:									
3335133121	Single point 27/.....	3		(D)	(D)	(D)		(D)	(D)	(D)
	Two point:									
3335133128	150 tons and under 27/.....	2		(D)	(D)	(D)		(D)	(D)	(D)
3335133133	151 tons and over .....	-		(X)	(X)	(X)		(X)	(X)	(X)
3335133136	Automatic presses, strip or coil fed 27/.....	5		(D)	(D)	(D)		(D)	(D)	(D)
3335133141	All other mechanical presses 27/.....	1	c/	229	50,548	44,244	c/	149	a/	45,845
	Hydraulic presses:									
	Vertical single action, all tonnages:									
3335133146	Housing or straight side type 28/.....	4		(D)	(D)	(D)		(D)	(D)	9,942
3335133151	Column type (open rod) 28/.....	5	a/	71	25,933	19,093	b/	111	a/	25,359
	Gap or C-frame:									
3335133156	15 tons and under 29/ 30/.....	5		(D)	(D)	(D)		(D)	(D)	339
3335133161	16 tons to 35 tons 29/ 30/.....	4		337	26,158	1,220		(D)	(D)	986
3335133166	Over 35 tons 29/30/.....	4		59	3,893	c/	3,092	b/	342	29,911
3335133171	Other hydraulic and pneumatic presses, including horizontal .....	7	c/	708	14,300	b/	6,671	c/	763	12,988
				a/				b/		8,002
3335135176	Forging machines, including forging presses and die stamping presses 31/ 32/.....	4		(D)	(D)	(D)		(D)	(D)	(D)
33351351	All other metal forming type machine tools 21/.....	30		2,166	150,137	82,005		2,488	169,130	46,651
3335135101	All other metal forming type machine tools valued under \$3,025 each 21/ .....	6		(D)	(D)	(D)		(D)	(D)	(D)
	All other metal forming type machine tools valued at \$3,025 each or more:									
3335135106	Thread rolling machinery 31/ 32/.....	2		(D)	(D)	(D)		(D)	(D)	(D)
3335135111	Metal container-making machinery 31/ 32/.....	4		(D)	(D)	15,951		123	37,260	(D)
3335135116	Die casting machines, all types 31/ 32/.....	3		(D)	(D)	(D)		(D)	(D)	(D)
3335135121	Riveting machines 31/ 32/.....	7		(D)	(D)	(D)	b/	1,016	b/	24,883
3335135126	All other metal forming type machine tools, n.e.c. 31/ 32/.....	18		2,166	150,137	66,054		1,349	106,987	46,651
3335137121	Remanufactured metal forming machine tools .....	8	a/	65	7,529	7,050	a/	123	8,964	6,157

- Represents zero. D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified. r/Revised by 5 percent or more from previously published data. X Not applicable.

1/Product codes 3335123126 and 3335123134 for 2003 are included in "Metal cutting type machine tools valued at \$3,025 each or more," but excluded from product class 33351231.

2/Data for product codes 333512A101, 333512A111, and 3335129101 are included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from product classes 333512A1 and 33351291.

3/Product code 3335123131 is included in the total for "Metal cutting type machine tools valued under \$3,025" but excluded from product class 33351231.

4/Product code 3335124101 is included in the total for "Metal cutting type machine tools valued under \$3,025" but excluded from product class 33351241.

5/Product code 333512A103 is combined with product code 333512A105 to avoid disclosing data for individual companies.

6/Product code 333512A113 is combined with product code 333512A117 to avoid disclosing data for individual companies.

7/Product codes 333512A119, 333512A121, and 333512A123 for 2003 for shipments were combined to avoid disclosing data for individual companies.

8/"Unfilled orders (value)" for product codes 333512A119 and 333512A121 are combined to avoid disclosing data for individual companies.

9/Product codes 3335128101, 3335128106, and 3335128111 are combined with product code 3335121100 to avoid disclosing data for individual companies.

10/Product codes 3335122120 and 3335122151 are combined. Product codes 3335122108 and 3335122151 for 2004 and for shipments for 2003 were combined.

"Unfilled orders (value)" for product codes 3335122142 and 3335122151, and 3335122116 for 2003 were combined to avoid disclosing data for individual companies.

11/Product codes 3335122122 and 3335122136 for shipments, and "Unfilled orders (value)" for 2003 were combined to avoid disclosing data for individual companies.

12/Product codes 3335122156 and 3335122161 for shipments were combined to avoid disclosing data for individual companies.

13/"Unfilled orders (value)" for product codes 3335122156 and 3335122166 for 2004, and 3335122156, 3335122161, and 3335122166 for 2003 were combined to avoid disclosing data for individual companies.

14/Product codes 3335123101 and 3335123116 are combined with product code 3335123121 to avoid disclosing data for individual companies.

15/Product codes 3335124106 and 3335124111 are combined with product code 3335124121 to avoid disclosing data for individual companies.

16/Product codes 3335127101 and 3335127106 for shipments, and "Unfilled orders (value)" for 2003 are combined to avoid disclosing data for individual companies.

17/Product codes 3335127112, 3335127113, 3335127114, and 3335127146 in 2004 and "Unfilled orders (value)" in 2003 are combined to avoid disclosing data for individual companies.

18/Product codes 3335127112, 3335127113, and 3335127114 for shipments for 2003 were combined to avoid disclosing data for individual companies.

19/Product codes 3335129106, 3335129131 for 2004, and 3335129136, for shipments; and "Unfilled orders (value)" for product codes 3335129131 and 3335129136 are combined to avoid disclosing data for individual companies.

20/Product code 3335129122 is combined with product code 3335129123 to avoid disclosing data for individual companies.

21/Product codes 3335131101, 3335133101 for 2004, and 3335135101 are included in the total for "Metal forming type machine tools valued under \$3,025," but excluded from product classes 33351311, 33351331 and 33351351.

Table 2. Total Shipments and Unfilled Orders  
[Quantity in units. Value in thousands of dollars]

22/Product codes 3335131111 and 3335131126, and "Unfilled orders (value)" for 3335131116 and 3335131126 for 2004 are combined to avoid disclosing data for individual companies.

23/Product codes 3335131116 and 3335131121 for 2003 shipments were combined to avoid disclosing data for individual companies.

24/"Unfilled orders (value)" for product codes 3335131136 and 3335131161 for 2003 were combined to avoid disclosing data for individual companies.

25/Product code 3335131142 is combined with product code 3335131151 to avoid disclosing data for individual companies.

26/Product code 3335133106 is combined with product code 3335133113 to avoid disclosing data for individual companies.

27/Product codes 3335133121, 3335133128, 3335133136 are combined with product code 3335133141 to avoid disclosing data for individual companies.

28/Product codes 3335133146 and 3335133151 for 2004 and for shipments for 2003, are combined to avoid disclosing data for individual companies.

29/Product codes 3335133156 and 3335133161 for 2004 are combined to avoid disclosing data for individual companies.

30/Product codes 3335133156 and 3335133161, and 3335133166 for shipments for 2003 were combined to avoid disclosing data for individual companies.

31/Product codes 3335135176, 3335135106, 3335135116, 3335135121, and 3335135126, and 3335135111 for shipments, for 2004, are combined to avoid disclosing data for individual companies.

32/Product codes 3335135176, 3335135106, 3335135116 and 3335135126, and "Unfilled orders (value)" for 3335135111, 3335135121, and 3335135126, for 2003 are combined to avoid disclosing data for individual companies.

Note : Percent of estimation of each item is indicated as follows: a/16 to 25 percent of this item is estimated. b/26 to 50 percent of this item is estimated. c/Over 50 percent of this item is estimated.

Table 3. Shipments of Numerically Controlled Machines; All Export Shipments: 2004 and 2003  
[Quantity in units. Value in thousands of dollars]

Product description	2004			2003		
	Shipments of numerically controlled machines		Export shipments (value) 1/	Shipments of numerically controlled machines		Export shipments (value) 1/
	Quantity	Value		Quantity	Value	
Metalworking machinery.....	16,813	1,394,202	469,359	11,132	1,051,607	388,141
Metal cutting type machine tools 2/.....	15,983	1,223,133	372,926	10,518	914,594	283,479
Boring and drilling machines 2/.....	(D)	(D)	(D)	(D)	(D)	(D)
Gear cutting machines 2/.....	(D)	(D)	(D)	(D)	(D)	(D)
Grinding, polishing, buffing, and lapping machines 2/.....	494	81,172	(D)	519	86,678	(D)
Valued under \$3,025 each, external cylindrical grinding machines (plain and universal), and surface grinding machines, all types 2/.....	451	77,879	(D)	453	83,397	(D)
Honing, lapping, polishing and buffing machines 2/.....	43	3,293	(D)	66	3,281	(D)
Horizontal NC turning machines, valued at \$3,025 or more 3/.....	3,212	187,580	58,372	1,816	119,490	36,717
Single spindle NC turning machines:						
Chuck sizes less than 10 inches 3/.....	2,181	103,431	(D)	1,234	67,034	(D)
Chuck sizes over 10 inches but less than 15 inches 4/.....	(D)	(D)	(D)	(D)	(D)	(D)
Chuck sizes 15 inches and over and multiple spindle 4/.....	1,031	84,149	21,756	582	52,456	13,908
Vertical NC turning machines, valued at \$3,025 or more 2/.....	70	31,287	(D)	(D)	(D)	(D)
Nonnumerically controlled turning machines, valued at \$3,025 or more 2/.....	(X)	(X)	(D)	(X)	(X)	(D)
Milling machines 2/.....	(D)	(D)	(D)	418	33,837	(D)
Machining centers 5/ 8/.....	9,308	475,206	107,901	5,841	318,340	74,768
Drill, mill and bore, vertical (automatic tool change) 5/.....	7,422	387,422	(D)	4,665	245,031	(D)
Y-axis travel less than 20 inches 5/ 6/.....	(D)	(D)	(D)	(D)	(D)	(D)
Y-axis travel 20 inches through 26 inches 5/ 6/.....	6,783	321,311	(D)	4,275	205,126	(D)
Y-axis travel over 26 inches 5/.....	639	66,111	(D)	390	39,905	(D)
Drill, mill, and bore, horizontal (automatic tool change) 7/ 8/ 10/.....	(D)	(D)	(D)	138	42,537	9,957
Under 500mm pallet 7/ 8/ 9/ 10/.....	(D)	(D)	(D)	(D)	(D)	(D)
500mm-800mm pallet 7/ 8/ 9/ 10/.....	(D)	(D)	(D)	(D)	(D)	(D)
Over 800mm pallet 7/ 8/ 9/.....	(D)	(D)	(D)	138	42,537	(X)
All other machining centers 2/ 7/.....	1,886	87,784	(D)	1,038	30,772	(D)
Station type machines, and other metal cutting machine tools, n.e.c. 2/.....	1,055	275,146	69,026	854	144,343	64,025
Remanufactured metal cutting machines 2/.....	319	25,387	(D)	302	27,795	(D)
Metal forming type machine tools 11/.....	830	171,069	96,433	614	137,013	104,662
Punching, shearing, bending, and forming machines 12/.....	642	105,753	53,684	413	65,030	35,140
Punching and shearing machines 12/.....	(D)	(D)	27,669	170	40,063	11,606
All bending and forming machines, power operated 12/.....	(D)	(D)	26,015	243	24,967	23,534
Presses (except forgings) 11/.....	31	13,345	14,833	(D)	(D)	11,101
Forging machines, and all other metal forming type machine tools 13/.....	157	51,971	27,916	173	64,456	58,421
Remanufactured metal forming machines 13/.....	(D)	(D)	(D)	(D)	(D)	(D)

D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified. X Not applicable.

1/Data includes the value of all types of machines exported, as reported by MQ333W survey panel.

2/Data were included in total "Metal cutting type machine tools" ("Station type machines" 2003 only).

3/Data are included in "Horizontal NC turning machines, valued at \$3,025 or more."

4/Data are included in "Chuck sizes 15 inches and over and multiple spindle."

5/Data for export shipments are included in "Machining centers."

6/Data for shipments of numerically controlled machines are included in "Y-axis travel 20 inches through 26 inches."

7/Data for shipments of numerically controlled machines for "Drill, mill, and bore, horizontal (automatic tool change)" are included in "All other machining centers" for 2004.

8/Data for export shipments are included in "Machining centers" for 2004.

9/Data for shipments of numerically controlled machines were included in "Over 800mm pallet" in 2003.

10/Data for export shipments were included in "Drill, mill, and bore, horizontal (automatic tool change)" in 2003.

11/Data for shipments of numerically controlled machines were included in "Metal forming type machine tools" in 2003.

12/Data for shipments of numerically controlled machines are included in "Punching, shearing, bending, and forming machines" for 2004.

13/Data for "Remanufactured metal forming machines" are included in "Forging machines, and all other metal forming type machine tools."

Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 2004 and 2003  
[Quantity in units. Value in thousands of dollars]

Product description	Manufacturers' shipments		Exports of domestic merchandise 1/2/		Imports for consumption 1/3/	
	Quantity	Value	Quantity	Value at port	Quantity	Value 4/
Boring and drilling machines, excluding multifunction NC machines, machining centers:						
Boring machines:						
Valued under \$3,025 each.....	(D)	(D)	15,704	1,528	739	399
Valued at \$3,025 each or more .....	1,519	90,956	285	17,493	813	53,589
Drilling machines:						
Valued under \$3,025 each .....	1,177	2,494	8,947	4,966	261,861	22,525
Valued at \$3,025 each or more .....	422	52,519	1,315	29,526	1,180	50,118
Gear cutting machines 5/.....	553	342,244	1,192	43,044	512	64,729
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	27,090	11,912	75,324	10,770	892,674	31,984
Valued at \$3,025 each or more .....	2,516	183,841	2,220	86,238	4,693	247,637
Lathes (turning machines) under \$3,025.....	(D)	(D)	3,327	3,207	19,974	14,641
Horizontal NC turning machines.....	3,212	187,580	414	43,921	5,062	562,744
Vertical NC turning machines.....	70	31,287	34	6,888	399	68,303
Nonnumerically controlled turning machines.....	756	13,196	1,147	14,728	3,233	71,146
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	3,375	4,781	14,350	8,620
Valued at \$3,025 each or more.....	812	35,086	997	26,971	4,467	118,177
Machining centers (multifunction NC machines):						
Drill, mill, and bore, vertical (automatic tool change):						
Y-axis travel less than 20 inches and 20 inches through 26 inches.....	6,783	321,311	1,012	113,529	2,478	215,743
Y-axis travel 26 inches and over.....	639	66,111	55	7,518	528	76,765
Drill, mill, and bore, horizontal (automatic tool change) 6/.....	(D)	(D)	-	-	1,444	397,388
Other machining centers 6/.....	1,886	87,784	190	18,836	580	47,228
Station type machines 5/.....	(D)	(D)	76	19,648	500	203,269
Other metal cutting machine tools:						
Valued under \$3,025 each.....	13,709	14,060	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	6,737	350,902	13,048	415,523	7,741	364,857
Punching and shearing machines:						
Valued under \$3,025 each.....	(D)	(D)	10,704	4,328	18,820	4,095
Valued at \$3,025 each or more.....	4,924	148,328	1,768	72,137	2,069	109,049
Bending and forming machines:						
Valued under \$3,025 each.....	1,197	2,200	20,924	8,012	100,782	13,574
Valued at \$3,025 each or more.....	3,013	173,288	2,284	82,123	12,655	265,180
Presses (except forging presses).....	1,542	123,399	4,858	65,329	28,312	136,497
Forging machines, including presses 7/.....	(D)	(D)	281	44,550	1,426	96,653
All other metal forming type machine tools:						
Valued under \$3,025 each.....	(D)	(D)	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Die casting machines 7/.....	(D)	(D)	1,214	24,231	1,393	55,282
Thread rolling machines 7/.....	(D)	(D)	49	2,500	28	2,330
Other metal forming machines 7/.....	2,166	150,137	(NA)	(NA)	(NA)	(NA)

## 2003

Boring and drilling machines, excluding multifunction NC machines, machining centers:						
Boring machines:						
Valued under \$3,025 each.....	(D)	(D)	677	487	484	138
Valued at \$3,025 each or more .....	1,231	76,577	281	18,114	566	40,112
Drilling machines:						
Valued under \$3,025 each .....	1,200	2,199	5,317	4,228	266,981	19,498
Valued at \$3,025 each or more .....	381	52,704	839	28,716	683	46,750



Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 2004 and 2003  
[Quantity in units. Value in thousands of dollars]

Product description	Manufacturers' shipments		Exports of domestic merchandise 1/2/		Imports for consumption 1/3/	
	Quantity	Value	Quantity	Value at port	Quantity	Value 4/
Gear cutting machines 5/.....	374	287,098	4,075	35,894	264	38,785
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	30,154	11,117	72,112	14,688	746,471	28,158
Valued at \$3,025 each or more .....	2,232	157,524	2,287	80,602	4,827	271,873
Lathes (turning machines) under \$3,025.....	(D)	(D)	1,285	1,398	21,573	11,870
Horizontal NC turning machines.....	1,816	119,490	308	38,322	3,651	407,747
Vertical NC turning machines.....	(D)	(D)	47	7,806	316	52,270
Nonnumerically controlled turning machines.....	(D)	(D)	772	13,365	2,648	51,217
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	3,803	5,382	12,925	6,532
Valued at \$3,025 each or more.....	531	39,332	1,576	41,744	3,520	88,423
Machining centers (multifunction NC machines):						
Drill, mill, and bore, vertical (automatic tool change):						
Y-axis travel less than 20 inches and 20 inches through 26 inches.....	4,275	205,126	666	73,750	1,689	141,649
Y-axis travel 26 inches and over.....	390	39,905	15	2,080	321	57,961
Drill, mill, and bore, horizontal (automatic tool change).....	138	42,537	47	12,772	978	242,966
Other machining centers.....	1,038	30,772	477	42,422	289	82,722
Station type machines 5/.....	(D)	(D)	44	10,473	310	201,616
Other metal cutting machine tools:						
Valued under \$3,025 each.....	10,817	9,804	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	5,882	240,286	9,225	293,802	5,525	254,641
Punching and shearing machines:						
Valued under \$3,025 each.....	(D)	(D)	4,023	3,048	12,511	4,237
Valued at \$3,025 each or more.....	3,904	103,056	1,337	47,354	1,622	79,699
Bending and forming machines:						
Valued under \$3,025 each.....	1,435	2,237	14,341	4,889	97,797	7,087
Valued at \$3,025 each or more.....	2,654	130,290	2,294	87,305	11,235	238,960
Presses (except forging presses).....	7,053	120,879	8,054	72,112	13,117	124,953
Forging machines, including presses 7/.....	(D)	(D)	218	40,142	1,742	163,473
All other metal forming type machine tools:						
Valued under \$3,025 each.....	(D)	(D)	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Die casting machines 7/.....	(D)	(D)	723	12,597	1,932	51,335
Thread rolling machines 7/.....	(D)	(D)	25	696	52	3,134
Other metal forming machines 7/.....	1,349	106,987	(NA)	(NA)	(NA)	(NA)

- Represents zero. D Withheld to avoid disclosing data for individual companies. NA Not available.

1/For a comparison of North American Industry Classification System (NAICS)-based product codes, Schedule B export codes, and HTSUSA import codes, see Table 5.

2/Source: Census Bureau report EM 545, U.S. Exports.

3/Source: Census Bureau report IM 145, U.S. General Imports for Consumption.

4/Dollar value represents the c.i.f. (cost, insurance, and freight) value at first port of entry in the United States plus import duties.

5/Manufacturing shipments data for "Station type machines" have been combined with "Gear cutting machines" to avoid disclosing data for individual companies.

6/Data included with "Other machining centers" for 2004.

7/Data included with "Other metal forming machines."

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
	Boring machines, excluding multifunction NC machines, machining centers:		
333512A101	All boring machines valued under \$3,025 each.....	8459.39.0020	8459.39.0020
		8459.40.0020	8459.40.0020
	Machines valued at \$3,025 each or more:		
333512A103	Horizontal boring, drilling, and milling machines, including floor, table and rail mounted, and all other boring machines (except boring lathes).....	8459.31.0010	8459.31.0010
		8459.31.0040	8459.31.0040
		8459.31.0070	8459.31.0070
		8459.39.0040	8459.39.0040
		8459.39.0050	8459.39.0050
		8459.40.0040	8459.40.0040
		8459.40.0050	8459.40.0050
		8459.40.0070	8459.40.0070
		8459.40.0080	8459.40.0080
333512A105	Precision and jig boring machines, including horizontal, vertical, and all other precision boring machines.....	8459.10.0000	8459.10.0000
	Drilling machines, excluding machining centers:		
333512A111	All drilling machines valued under \$3,025 each.....	8459.29.0020	8459.29.0020
	Machines valued at \$3,025 each or more:		
333512A113	Vertical, upright drilling machines, including plain upright and heavy duty.....	8459.29.0070	8459.29.0070
	Multiple spindle drilling machines (cluster of spindles driven from one central power unit):		
333512A119	Adjustable joint and fixed center type.....	8459.29.0040	8459.29.0040
333512A121	All other automatic multiple spindle drilling machines, including indexing turret head (fixed column and table)		
333512A117	Deep hole drilling machines.....	8459.21.0080	8459.21.0080
333512A123	All other drilling machines, n.e.c., including bench type sensitive, vertical, n.e.c., and radial.....	8459.29.0050	8459.29.0050
		8459.29.0090	8459.29.0090
3335121100	Gear cutting machines, includes gear hobbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines.....	8461.40.1050	8461.40.1020
		8461.40.1070	8461.40.1030
		8461.40.1090	8461.40.1040
		8461.40.5040	8461.40.1060
		8461.40.5060	8461.40.5040
			8461.40.5050
			8461.40.5070
	Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):		
3335122101	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each.....	8460.39.0020	8460.39.0020
		8460.40.0020	8460.40.8020
		8460.90.0020	8460.90.8020
	Machines valued at \$3,025 each or more:		
	External cylindrical grinding machines:		
3335122108	Plain and universal, including angular wheel types.....	8460.21.0080	8460.21.0080

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
3335122116	Roll, chucking, centerless, and other cylindrical grinding machines.....	8460.29.0010 8460.29.0030	8460.29.0010 8460.29.0030
3335122136	All other disc grinders, including bench, floor, snag, double spindle grinders, and abrasive belt grinders		
3335122151	All other grinding machines n.e.c., including planer type, and thread grinding machines.....	8460.29.0050	8460.29.0050
3335122122	Surface grinding machines.....	8460.11.0080 8460.19.0010 8460.19.0050	8460.11.0080 8460.19.0010 8460.19.0050
3335122142	Tool, cutter, and drill point grinding machines, including universal and special .....	8460.31.0080	8460.31.0080
3335122156	Honing and lapping machines (except gear honing and lapping): Internal, including combination bore, hone, and external (except flat surface lapping machines) AND		
3335122161	Flat surface lapping machines (except gear lapping) AND		
3335122166	Polishing and buffing machines, including speed lathes and multistation type.....	8460.40.0060 8460.40.0080 8460.90.0060 8460.90.0080	8460.40.4060 8460.40.8080 8460.90.4060 8460.90.8080
3335123131	Lathes (turning machines): All lathes valued under \$3,025 each.....	8458.19.0020 8458.99.5060	8458.19.0020 8458.99.5060
3335123101	Machines valued at \$3,025 each or more: Horizontal spindle: Multiple spindle NC turning machine.....	8458.11.0010	8458.11.0010
3335123107	Single spindle NC turning machine: Chuck sizes less than 10 inches AND		
3335123116	Chuck sizes from 10 inches but less than 15 inches AND		
3335123121	Chuck sizes 15 inches and over.....	8458.11.0050 8458.11.0090	8458.11.0050 8458.11.0090
3335123126	Vertical spindle.....	8458.91.1060 8458.91.1080 8458.91.5050 8458.91.5070	8458.91.1060 8458.91.1080 8458.91.5050 8458.91.5070
3335123134	Nonnumerically controlled turning machines valued at \$3,025 each or more.....	8458.19.0030 8458.19.0050 8458.19.0070 8458.19.0090 8458.99.1050 8458.99.5090	8458.19.0030 8458.19.0050 8458.19.0070 8458.19.0090 8458.99.1050 8458.99.5090
3335124101	Milling machines, excluding machining centers: All milling machines valued under \$3,025 each.....	8459.59.0020 8459.69.0020	8459.59.0020 8459.69.0020
3335124106	Machines valued at \$3,025 each or more: General-purpose, knee milling machines, all types.....	8459.51.0080 8459.59.0030	8459.51.0080 8459.59.0030

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
3335124111	Automatic and manufacturing bed type: Single spindle, multiple spindle and special-purpose machines.....	8459.61.0080	8459.61.0080
3335124121	All other milling machines, n.e.c., including planer type and thread milling machines.....	8459.69.0050 8459.69.0070 8459.69.0090	8459.69.0050 8459.69.0070 8459.69.0090
	Machining centers (multifunctions NC machines):		
	Drill, mill, and bore, vertical (automatic tool change):		
3335127101	Y-axis travel less than 20 inches.....	8457.10.0015	8457.10.0015
3335127106	Y-axis travel 20 inches through 26 inches		
3335127111	Y-axis travel over 26 inches.....	8457.10.0025	8457.10.0025
	Drill, mill, and bore, horizontal (automatic tool change):		
3335127112	Under 500mm pallet AND		
3335127113	500mm-800mm pallet AND		
3335127114	Over 800mm pallet.....	8457.10.0036 8457.10.0039	8457.10.0055 8457.10.0060 8457.10.0065 8457.10.0070
3335127146	All other machining centers, including special machining centers, special adapting of standard machining centers, and machining centers with indexing turret.....	8457.10.0045	8457.10.0075
	Station type machines:		
3335128101	Dial or rotary, trunnion, and center column.....	8457.20.0010	8457.20.0010
3335128106	Transfer (free, palletized shuttle).....	8457.20.0090	8457.20.0090
3335128111	Other station type, n.e.c. ....	8457.30.0010 8457.30.0090	8457.30.0010 8457.30.0090
	Other metal cutting machine tools:		
3335129101	Other metal cutting machine tools, n.e.c. valued under \$3,025.....	8459.70.0060 8461.20.0070 8461.30.0040 8461.50.0020 8461.90.6020 8461.90.6050	8459.70.8060 8461.20.8070 8461.30.8040 8461.50.8020 8461.90.6020 8461.90.6050
	Machines valued at \$3,025 each or more:		
3335129106	Broaching machines, including internal surface and all other broaching machines.....	8461.30.0060 8461.30.0080	8461.30.4060 8461.30.8080
	Sawing and cutoff machines:		
3335129122	Band saws - vertical.....	8461.50.0050	8461.50.4050
3335129123	Band saws - horizontal.....	8461.50.0090	8461.50.8090
3335129126	All other sawing and cutoff machines		

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
3335129131	Spark erosion, ultrasonic and electrolytic machines, all types.....	8456.20.0000 8456.30.0000 8456.99.3005 8456.99.3040 8456.99.3060 8456.99.3080	8456.20.1010 8456.20.1050 8456.30.1020 8456.30.1050 8456.30.1070 8456.99.3005 8456.99.3040 8456.99.3060 8456.99.3080
3335129136	Miscellaneous metal cutting machine tools, including rifling, centering, keyseating, pointing, chemfering, facing, shaving, grooving, countersinking, burring, reaming, screw and nut slotting machines, threading planers, and shapers.....	8456.10.0000 8459.70.0020 8459.70.0080 8461.20.0010 8461.20.0090 8461.90.3040 8461.90.3080 8461.90.6030 8461.90.6090	8456.10.1010 8456.10.1020 8459.70.4000 8459.70.8080 8461.20.4000 8461.20.8090 8461.90.3040 8461.90.3080 8461.90.6030 8461.90.6090
3335131101	Punching and shearing machines: All punching and shearing machines valued under \$3,025 each.....	8462.39.0020 8462.49.0020	8462.39.0020 8462.49.0020
	Machines valued at \$3,025 or more: Power operated only: Plate shearing machines (squaring, slitting, etc.):		
3335131116	Mechanical		
3335131121	Hydraulic.....	8462.31.0080	8462.31.0080
3335131106	Punches, including combination punching and shearing machines.....	8462.39.0050 8462.41.0080	8462.39.0050 8462.41.0080
3335131111	Punching machines fixed position and two axes positioning table.....	8462.49.0050	8462.49.0050
3335131126	Other power-operated punching and shearing machines		
3335131131	Bending and forming machines: All bending and forming machines valued under \$3,025.....	8462.29.0020	8462.29.8025
	Machines valued at \$3,025 each or more:		
3335131136	Press brakes, all types .....	8462.21.0080	8462.21.4085
3335131142	Roll bending machines, including sheet, plate, angles, bars, shapes, and tubes .....	8462.29.0030 8462.29.0040	8462.21.8085 8462.29.4085

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
3335131151	Rotary bending and forming machines, including rotary head AND		
3335131161	Other bending and forming machines, including folders.....	8462.29.0050	8462.29.8035 8462.29.8045 8462.29.8055
3335133101	Presses (except forging presses): All presses valued under \$3,025 each..... Machines valued at \$3,025 each or more: Mechanical Open back inclinable (gap type):	8462.99.0020	8462.99.8020
3335133106	50 tons and under.....	8462.99.0030	8462.99.4030
3335133113	Over 50 tons.....	8462.99.0040	8462.99.8045
3335133121	Vertical straight sided and arch frame, excluding knuckle joint, including cam and crank: Single action: Single point..... Two point: 150 tons and under Over 150 tons	8462.99.0060	8462.99.8060
3335133128	Automatic presses, strip or coil field		
3335133133	Other mechanical presses, including end wheel type		
3335133136	bulldozer, double and triple action, and transfer		
3335133141	fed presses, four point and knuckle joint, excluding automated lines of standard equipment		
3335133146	Hydraulic presses (metalworking only): Vertical single action, all tonnages: Housing or straight side type		
3335133151	Column type (open rod)		
3335133156	Gap or C-frame: 15 tons and under.....	8462.91.0060	8462.91.4060
3335133161	16 tons to 35 tons.....	8462.91.0090	8462.91.8090
3335133166	Over 35 tons		
3335133171	Other hydraulic and pneumatic presses, including horizontal		
3335135176	Forging machines, including forging presses and die stamping presses.....	8462.10.0030 8462.10.0035 8462.10.0055	8462.10.0030 8462.10.0035 8462.10.0055
3335135101	All other metal forming type machine tools: All other metal forming type machine tools valued under \$3,025 each.....	8463.20.0060 8463.90.0060	8463.20.0060 8463.90.0060
3335135116	Machines valued at \$3,025 each or more: Die casting machines all types.....	8454.30.0010	8454.30.0010
3335135106	Thread rolling machinery.....	8463.20.0080	8463.20.0080
3335135111	Metal container-making machinery		
3335135121	Riveting machines (except hand held portable types).....	8463.90.0080	8463.90.0080
3335135126	All other metal forming type machine tools, n.e.c.		

n.e.c. Not elsewhere classified.

1/Source: 2004 edition, Harmonized System-Based Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

2/Source: Harmonized Tariff Schedule of the United States, Annotated (2004).

# Appendix.

## General CIR Survey Information, Explanation of General Terms and Historical Note

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### GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

### NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the NAICS sectors:

- 21 Mining
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative and Support and Waste Management and Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

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The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

## FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

## RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

## DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

## DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

## EXPLANATION OF GENERAL TERMS

**Capacity.** The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

**Consumption.** Materials used in producing or processing a product or otherwise removing the product from the inventory.

**Exports.** Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

**Gross shipments.** The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

**Interplant transfers.** Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

**Inventories.** The quantity or value of finished goods, work in progress, and materials on hand.

**Machinery in place.** The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

**Net receipts.** Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

**Production.** The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

**Quantities produced and consumed.** Quantities of each type of product produced by a company for internal consumption within that same company.



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**Quantity and value of new orders.** The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

**Quantity and value of shipments.** The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and

returns. Shipments to a company's own branches are assigned the same value as comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

**Stocks.** Total quantity of ending finished inventory.

**Unfilled orders (backlog).** Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

#### **HISTORICAL NOTE**

Data on metalworking machinery have been collected by the Census Bureau since 1942. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959) available at your local Federal Depository Library.